Mr. M. Mitchell,
HOME OFFICE - INDIANAPOLIS

St. Louis Park, Minn.

H. L. Dans

December 24, 1940

DRAINAGE - WASTE WATER

We have your letter of December 18, in reference to the extraction of benzo phenols from our waste water, and in accordance with your request, we are arranging to send you a gallon sample of the light oil we propose to use for extraction. The oil is a distillate of vertical retort tar, the first pan, or 13% of the still charge.

The specific gravity of this oil after washing free of acids will be about .956 at 38° C. The data in connection with our first experience with this process was covered in Mr. Holstrom's letter of the 13th.

We were very much interested to learn that in your laboratory test you were able to reduce the benzo-phenols in the sample we sent you from 2000 ppm to 125 ppm.

Our laboratory test did not give us anything like this result, and in checking over the procedure we followed, we can think of only one factor that may have a very important effect on the results. We refer to the length of time allowed for agitation. In our plant operation, we limited agitation to one hour. In the laboratory, using a separatory funnel, shaking was considered sufficient after three minutes.

In making our laboratory test, we used the same first pan vertical retort distillate, removed the tar acids with several washings of caustic soda, followed by removal of the tar bases, washing with water and redistilling. There was a good separation of the water and oil; but as pointed out in Mr. Holstrom's letter, the water after washing contained 1950 ppm benzo-phenols, which, of course, is not satisfactory.

We will make another test extraction in the plant very soon, using extreme care to have the water free from oil or tar and making certain that the oil is completely neutral and clean. In this test we plan to carry the agitation for a much longer period of time.

We note that your analysis for benzo-phenols by the Chapin method shows a lower result than ours. In a previous test this was just the reverse, and you showed higher results.

We expect that with the Chapin test, where results depend on the operators judgement in matching color, there would be some discrepancy, but not as great a spread as we show now. Our results should check closer.

Yours very truly,

H. L. Dans

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